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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/698,204	08/14/1996	TOSHIMITSU KONUMA	0756-1553	1806

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EXAMINER	
PARKER, KENNETH	
ART UNIT	PAPER NUMBER
2871	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/698,204	Applicant(s) Konuma
	Examiner Kenneth Parker	Art Unit 2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Aug 20, 2001*.

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *13-15 and 18-60* is/are pending in the application.

4a) Of the above, claim(s) *23 and 47-49* is/are withdrawn from consideration.

5) ☒ Claim(s) *56-60* is/are allowed.

6) ☒ Claim(s) *13-15, 18-22, 24-46, and 50-55* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 46

18) ☒ Interview Summary (PTO-413) Paper No(s). 47

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 25-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mawatari et al 5200847 in view of Niki, U.S. patent # 5,278,682.

Mawatari et al discloses a liquid crystal device with a first substrate, second substrate, active devices in an active display region, driver circuits, and a sealing member, which encloses circuits, seals the liquid crystal, and which may optionally completely encloses the circuits (spec). The right side is shown with the edges of the sealant and substrates at least substantially aligned. The circuits on the substrate have a sealant between themselves and a cover glass.

The sealant being a UV curable adhesive was a conventional practice which offers the benefit of enabling selection of the time of curing and patterning, the circuits on both the driving section formed using the same processes as those in the display section. The use of common processes saves cost and the UV curing enables low cost simple fabrication. Therefore, it would have been obvious, in the device of Mawatari et al, to use a UV curable adhesive to enable patterning and simple low cost fabrication, and to use common processes for both circuit regions to save cost. The use of a fill port at the aligned edges was disclosed by Niki, stating the advantage of enabling filing without immersing the substrates in the reservoir (abstract). Therefore it would have been obvious, in the device of Mawatari et al, to employ a fill port at the aligned sides (those without drive circuits) for the benefit of avoiding immersion of the substrates.

The use of silver paste to connect the electrodes was conventional, and would have been obvious for that reason. The use of sealing resins was conventional in semiconductor devices, and considered to be obvious for that reason.

2. Claims 13-15, 18-22, and 24-46, 50-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo JP KOKI # 1-49022 in view of Niki, U.S. patent # 5,278,682.

Matsuo discloses a liquid crystal device with first substrate, and active matrix substrate with pixels in a matrix, driver circuits comprising TFTS, second substrate, liquid crystal between the substrates a resin material covering the driver circuits, and a sealer around the liquid crystal and driver circuits. Not clearly disclosed is the presence of an "inlet", however, the materials must have been introduced to the device, so somewhere, on something there must have been an inlet, or it would have been obvious to employ an inlet to enable control of the introduction of the materials.

The use of a fill port at the aligned edges was disclosed by Niki, stating the advantage of enabling filing without immersing the substrates in the reservoir (abstract). Although Matsuo shows a device with circuits on both sides, it was well known that the drivers could be functionally equivalently placed on two sides, which would have been obvious for that reason. Therefore it would have been obvious, in the device of Matsuo, to employ a fill port at the aligned sides with two sides having the circuits, for the benefit of avoiding immersion of the substrates. It would have been further obvious to use the side with out the circuit because the sides with the

circuit have a material enclosed in a sealant which would have been an obstruction from putting in a port there.

Providing with active matrix as amorphous silicon and the driver crystalline was well established, as the driver section is often the only one that requires the higher speed requiring crystalline silicon. The employment of and MIM diode was well known in the art as a lower cost alternative to TFT's, and epoxy and UV curing resins is essentially a complete list of the conventionally use materials, used for low cost, ease of assembly or the ability to pattern. It was well known to employ spacers in the sealing materials on liquid crystal devices to enable even spacing without stress forces related to omitting them. The use of silver paste to connect the electrodes was conventional, and would have been obvious for that reason. The use of sealing resins was conventional in semiconductor devices, and considered to be obvious for that reason. Further it would have been obvious to replace the low dielectric gas with a resin, as resin were well known for having a low dielectric, and as described above, were conventionally used with semiconductor devices.

Claims 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto, JP KOKI# 04-260023 in view of Matsuo JP KOKI # 1-49022.

Lacking from the device of Mitsutake is the resin covering the driver circuits and the sealants as claimed. Matsuo discloses a device in which the liquid crystal between the substrates a resin material covering the driver circuits, and a sealer around the liquid crystal and driver circuits,

and the that their structure offers protection from breakage and moisture. Therefore, it would have been obvious, in the device of Morimoto which discloses circuits on both substrates to employ the sealing structure of Matsuo for protection from moisture and breakage.

Allowable Subject Matter

Claims 56-60 are allowed.

Response to Arguments

Applicant's arguments regarding the silver paste or spacer used to connect the substrates are not **persuasive. Applicant has merely argued that the examiner did not provide references, not that applicant challenges the examiners assertion.** As stated in the previous office action, applicant has not addressed the actual ground of rejection, which is that the use of those silver paste and spacers was conventional. Applicant has not actually traversed this assertion, and has only pointed out differences between the references cited as examples and the current claims. **Other references can be cited in place of the current references, however, AS APPLICANT HAS NOT TRAVERSED THE FACT THAT THE USE OF SILVER SOLDER OR PASTE FOR THE PURPOSE CLAIMED IS NOTORIOUSLY WELL KNOWN, THAT FACT IS NOW CONSIDERED ADMITTED PRIOR ART. As there is**

no reason to spend time off the actual issues of the application, no references are provided or listed.

Applicant's arguments in respect to the fill port being located in a side without the driver circuits are not agreed with. The Niki reference teach is clearly applicable to Mawatari et al, which would suffer the problem described by Niki if done other wise. With Matsuo et al, done as a device with a circuit on two sides instead of four, the inlet on the side without the circuit wouldn't have to pierce the opposite enclosing area. Although there is not teaching of record telling this, the level of skill in the art in the liquid crystal area is considerably high, and the additional complexity required not to go through the other side would have been apparent. As clear advantages would have been apparent to those of ordinary skill, there would have been motivation to place the inlet at the circuit free side. Regarding applicants assertion that the location is claimed not the alignment of the substrates, it is noted that the primary reference Mawatari has these issues as identical. **Applicant's advantage of reduced damage due to static may be an unexpected result, however, and may have sufficient benefit to overcome the current combination. With further elaboration it may be possible to overcome the current rejection.**

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS**

ACTION IS MADE FINAL. See MPEP § 609(B)(2)(I). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Parker whose telephone number is (703) 305-6202.

The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or preceding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

February 8, 2002

Kenneth Parker
Primary Examiner
Group Art Unit 2871